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# Advanced Petroleum-Based Fuels - Diesel Emissions Control (APBF-DEC) Activity



**DEER Conference**  
August 25, 2003  
Newport RI



# APBF-DEC Mission



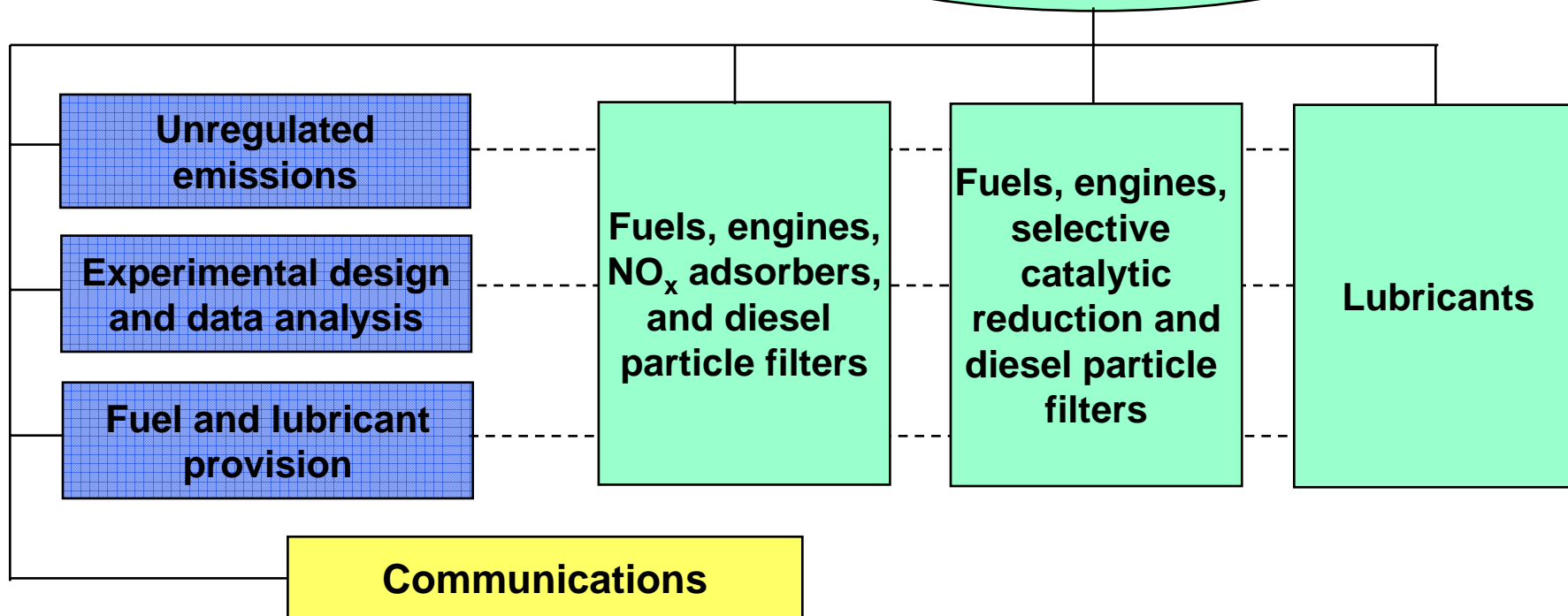
- Identify optimal combinations of fuels, lubricants, diesel engines, and emission control systems to:
  - Meet projected emission standards during the period 2000 to 2010 while maintaining continuous improvement in engine efficiency and durability
  - Maintain customer satisfaction with vehicle performance
  - Provide the basis for economical transport of people and goods
  - Meet additional potential constraints (e.g., emissions of unregulated substances, including ultra-fine particulate matter and greenhouse gases)
- Explore the potential to achieve even lower emissions of criteria and unregulated pollutants beyond 2010

# APBF-DEC Structure



DOE, EPA, additive companies,  
automobile manufacturers, engine  
manufacturers, energy companies,  
emission control mfrs., Calif. agencies

## APBF-DEC Steering Committee








# APBF-DEC Products



- Light and heavy-duty platforms for measurement of **effects of fuel and lubricant composition** on emissions under transient operation
- Comprehensive data on status of fuel-engine-emission control technologies for reducing criteria emissions for **U.S. EPA's ongoing technology assessments**
- Comprehensive data on effects of fuel & lubricant properties on emissions of **unregulated** substances

# ABPF-DEC Projects



Projects	Contract Labs	Technical Monitors	Project Managers 
Pass Car NAC/DPF	FEV 	Matthew Thornton NREL	DOE
SUV/Pick-up NAC/DPF	SwRI 	Matthew Thornton NREL	DOE
Heavy-Duty NAC/DPF	Ricardo 	Shawn Whitacre NREL	DOE
Heavy-Duty SCR/DPF	SwRI 	Ralph McGill ORNL	DOE
Lubricants	ATL/AEI	Shawn Whitacre NREL	DOE

# Participating Companies/Organizations



## *Automobile:*

DaimlerChrysler  
Ford  
GM  
Toyota

## *Government:*

CARB/SCAQMD  
DOE  
EPA  
NREL  
ORNL

## *Emission Control:*

Argillon  
ArvinMeritor  
Benteler  
Clean Diesel Tech.  
Corning  
Delphi  
Donaldson Co.  
Engelhard  
Johnson Matthey  
MECA  
NGK  
Rhodia  
Robert Bosch Corp.  
STT Emtec AB  
Tenneco Automotive  
3M  
Umicore

## *Energy/ Additives:*

American Chemistry  
Council  
API  
BP  
Castrol  
Chevron Oronite  
ChevronTexaco  
Ciba  
Conoco-Phillips  
Crompton  
Ergon  
Ethyl  
ExxonMobil  
Infineum  
Lubrizol  
Marathon Ashland  
Motiva  
NPRA  
Pennzoil-Quaker State  
Shell Global Solutions  
Valvoline

## *Engines:*

Caterpillar  
Cummins  
Detroit Diesel  
EMA  
International Truck  
& Engine  
John Deere  
Mack Trucks

## *Technology:*

Battelle